GLINKOV, M.A., professor, doktor tekhnicheskikh nauk; VAVILOV, N.S., kandidat tekhnicheskikh nauk.

Heat exchange in metallurgical furnace combustion chambers. Sbor. Inst. stali no.35:166-185 '56. (MLRA 10:8)

1. Kafedra metallurgicheskikh pechey.
(Metallurgical furnaces) (Heat--Transmission)

137-58-6-11676

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 65 (USSR)

AUTHORS Glinkov, M.A., Vavilov, N.S.

TITLE Heat Exchange in the Space Above the Bath of a Recirculation-type Steel-foundry Furnace (Teploobmen v postranstve nad vannoy retsirkulyatsionnoy staleplavil'noy pechi)

PERIODICAL: Sb. Mosk. in-t stali, 1957, Vol 37, pp 305-329

ABSTRACT: A presentation of the results of an investigation of heat exchange in a 10-ton steel-foundry recirculation-type furnace (RF) having 9.6 m^2 hearth area and simultaneous two-sided heavy-oil feed at 2-3 atm excess pressure, sprayed by compressed air at 4-5 atm excess pressure. The heat flux, measured by a heat gage of special design rises gradually during the heat and then drops at the end of the working period. The heat flow over the bath, Q_B, varies across the width of the furnace from one melt to the next, from between 800-1,100 thousand kcal/m^2hr at the front wall to 1200-1450 rearwards of the middle of the furnace, and drops to 1050-1150 thousand kcal/m^2hr at the rear wall. The take-up of heat by the bath, ΔQ, varies in similar fashion, attaining levels of 350-400 thousand kcal/m^2 hr. Q_B varies insignificantly along the length of the

Card 1/2

Kafedra metallurgicheskikh pechey, Moscow in-ta stali

Heat Exchange in the Space (cont.)

furnace, and ΔQ attains a maximum in the center of the furnace. The heat flux is distributed across the area of the furnace considerably more uniformly than in an open hearth, since the two-sided fuel feed makes it possible to maintain identical thermal conditions in either half of the working space $Q_{\text{ш}}$ varies during a melt as follows through the height of the working space from 1100-1250 thousand kcal/m^2hr at a point 300 mm from the surface of the bath to 850-900 at a height of 1200-1300 mm. Curves are presented for the variation in calculated temperature and in black-body radiation of the gas at different levels. The heat emissivity by radiation is 1500-2360 kcal/$m^2\,^{\circ}$C·hr, while for an open hearth furnace it does not exceed 1600. The bath surface is 70-80% black and the temperature of the RF bath surface is 1700-1800°C. The temperature of the metal is the same as in an open-hearth furnace. In the RF the slag undergoes considerably greater overheating. In the RF there is virtually no time during the heat when the bath is not undergoing vigorous agitation. The directed heat exchange plays a significant role.

G.G.

1. Metallurgy--[illegible] 2. Furnaces--Performance 3. Temperature--Measurement 4. Heat--Absorption

Card 2/2

VAVILOV, N.S.

Conference on the direct process of iron production. Izv. AN SSSR. Met. i gor. delo no.1:189 Ja-F '64. (MIRA 17:4)

VAVILOV, N.S.

Investigating heat flow in a recirculation-type steel smelting furnace. Trudy Inst.met. no.3:98-107 '58. (MIRA 12:3)
(Smelting furnaces)
(Heat--Transmission)

15(5)

AUTHOR: Vavilov, N. S.

SOV/2o-121-5-21/5o

TITLE: Problems of the Heating of Material in Shaft Arrangements at Layer Operation(Problemy nagreva materiala v shakhtnykh ustroystvakh pri sloyevom rezhime)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 5, pp 845 - 847 (USSR)

ABSTRACT: This paper suggests a new method of heat treatment of ground or granulated materials with a relatively short interval of the particle dimensions of the investigated material. This method consists of the following operations: The material (which is placed in a column-shaped receptacle) is displaced above a diaphragm in a gas flow. In this way, a chaotic cyclic retrogressive oscillating motion of the single particles or grains of the material is excited. Under certain conditions the material passes as a continuous flow through the hole in the diaphragm. According to experiments carried out on a cold model, the heat

Card 1/2

treatment in the suspended "spouting" layer may easily be regulated. The corresponding values of all the parameters (input of gas and material, height of the suspended layer etc.) may be kept constant. An advantage of this method, moreover, is the smaller loss of pressure by the flow through the diaphragm. A cascade apparatus having 4 diaphragms with holes of ~ 18% of the cross section was tested. The heat treatment of materials in a suspended "spouting" layer was tested with respect to pre-drying (podsushka), carbonization, and drying of coal granules of any dimension (~ 2-3 mm and more) and also with respect to the direct production of iron from spherical briquets of iron ore. Moreover, this method may be applied to the annealing of ores in metallurgy, and also to the heating and drying of any granular materials. In the above discussed apparatus, the heat may be supplied by any elementary method (or by a combination of methods). There are 3 figures and 11 references, 8 of which are Soviet.

PRESENTED: April 11, 1958, by I. P. Bardin, Academician

SUBMITTED: April 11, 1958

VAVILOV, N.S.

BARDIN, I.P.; GESS-DE-KALIVE, B.A.; KARAVETS, F.I.; MELENTIEV, P.N.; VAVILOV, N.S.

Vosstanovlenie rudno-toplivnykh granul vo vrveshenno-fontaniruyushchem sloe s tselyyu polucheniya gubchatogo zheleza.

report submitted for the 5th Physical Chemical Conference on Steel Production.

Moscow _ 30 May 62

VAVILOV, N.S.

Connection between the coefficients of radiating heat loss and radiating heat exchange and nomograms for their determination. Trudy Inst.met. no.5:50-69 '60. (MIRA 13:6)
(Metallurgical furnaces)
(Heat--Transmission)

VAVILOV, N.S.

Heating equipment for the treatment of materials in suspension with fountain effect. Trudy Inst. met. no.8:30-39 '61.
(MIRA 14:10)

(Ore dressing) (Furnaces, Heat-treating)

S/137/62/000/004/013/201
A006/A101

AUTHORS: Bardin, I. P., Gess-de-Kal'ye, B. A., Kanavtsev, P. I., Vavilov, N. S., Melenzhyev, P. N., Diyev, V. Ye.

TITLE: Reduction of ore-fuel granules in a suspeded gushing layer for the purpose of obtaining sponge iron

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 17, abstract 4V121 (V sb. "Fiz. khim osnovy proiz-va stali", Moscow, AN SSSR, 1961, 168-176)

TEXT: The authors describe a process of reducing ore-fuel granules (of 2 - 3 mm size) obtained by the chemical catalytical method developed by the Institute of Fuel Minerals and the Institute of Metallurgy imeni A. A. Baykov. The granules were prepared from KMA ore concentrates with coal coke and peaty semicoke. Reduction was performed in a suspended gushing layer in a laboratory metallic single-stage reactor with the aid of preheating reducing gas, which was then burnt for the external heating of the reactor. Reduction proceeded particularly intensively at $> 900^{\circ}C$; within 5 minutes a reduction degree of 90% was attained. The granules did not stick together or onto the reactor walls. Data

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are obtained for the design of a semi-industrial unit. For the industrial assimilation of the method the granules should be manufactured from very rich concentrates, containing 65 - 70% Fe. Laboratory melting of the sponge-Fe obtained shows that it may be used as a scrap substitute in steel production. There are 7 references.

A. Pokhvisnev

[Abstracter's note: Complete translation]

S/180/62/000/001/002/014
E111/E135

18.3200

AUTHORS: Vavilov, N.S., Tsylev, L.M., and Chao Ch'ung-Chu (Moscow)

TITLE: Reduction of iron from ores in a fountaining fluidized bed

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.1, 1962, 46-53

TEXT: The authors have previously described the results of a limited investigation of the reduction of ore-fuel granules with water gas in a fountaining-type fluidized bed. They later showed that in this case reduction proceeds especially rapidly at temperatures above 900 °C, whereas under stationary conditions this occurs only above 1000 °C. Laboratory melting of the iron sponge showed that it is a suitable substitute for scrap in steelmelting operations if the granules are made of concentrates with 65-70% iron. In the present article the authors describe laboratory investigations

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Reduction of iron from ores in ...

with a fountaining fluidized bed (Fig.2, where 1 is the column; 2 a conical orifice; 3 thermocouple sheaths; 4 platinum-rhodium/platinum thermocouple; 5 fluidized bed; 6 fountaining material). Charging and discharging arrangements are provided with a water-cooled receiver for rapid cooling of treated samples in a stream of nitrogen. Very rapid heating rates were obtained in the reactor (Fig.3 shows temperature, ^{o}C - time, min; curves for 0.5-1.0 mm fractions of iron ore being reduced in hydrogen; curves 1, 2 and 3 corresponding to charge weights of 20, 30 and 40 g respectively, in a 25 mm diameter reactor). Fig.4 shows reduction curves for the 0.25-0.5 mm fraction of one ore (44.45% Fe_{tot}, 63.36 Fe_2O_3, 19.47 SiO_2, 4.68 Al_2O_3, 0.62 Mn, 9.53 loss on ignition, remainder CaO, MgO, S, P, H_2O) in hydrogen in a 20 mm diameter reactor. Top graph gives bed temperature, and bottom left-hand graph the reduction parameters as functions of time, min. Curve 1 corresponds to Fe_{tot}, curve 2 to Fe_{met}, curve 3 to $\varphi = Fe_{met}/Fe_{tot}$, curves 4 and 5 to iron contents in the

Card 2/6

concentrate of β_1 and β_2, respectively, curves 6 and 7 to metallic-iron contents in the concentrate of k_1 and k_2 respectively, curve 8 to yield of primary concentrate γ_1, curve 9 is $\varphi_1 = (k_1/\beta_1) \times 100$, curve 10 is $\varphi_2 = (k_2/\beta_2) \times 100$. The right-hand graph gives Fe_{tot}, Fe_{met} and $\varphi = Fe_{met}/Fe_{tot} \times 100$ (curves 1, 2 and 3 respectively) as functions of temperature for holding times of 5 min. Dry magnetic concentration of the sponge iron in the laboratory removed silica, two concentrates being obtained. One had a high iron content (about 80%) but relatively low yield of about 73, iron recovery being up to 80-85% and silica content about 14%. The authors note that from one ore a 95% iron content powder was obtained, even when a fairly high silica content was allowed in order to improve yield, this result being better than in Wiberg sponge iron (Ref.4: M. Viberg, Sovremennyye problemy metallurgii (Present problems in metallurgy), 208-221, Izd.-vo AS USSR, 1958). The metallic powder obtained by the method is easy to briquette. With some ores reduction was carried out successfully in a stream of mixed gas (58.0% CH_4, 33.6 H_2, 6.0 CO, 0.8 CO_2, 1.6 O_2), the

temperatures giving quickest reduction being above 800 °C. Decomposition of hydrocarbons only became appreciable when heating was prolonged to 5-10 min, 0.36%.C being obtained in 10 min at 800 °C. No sticking was observed in the range 600 to 1000 °C. This feature of fountaining fluidized-bed reduction is attributed to the good flow conditions and the absence of dust in the reaction zone.
There are 5 figures and 7 tables.

SUBMITTED: May 27, 1961

Card 4/6

L 11201-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD
ACCESSION NR: AP3001374 S/0148/63/000/005/0026/0033

53

AUTHOR: Vavilov, N. S.

TITLE: IMET process of reducing metal in a suspended fountain layer

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1963, 26-33

TOPIC TAGS: reduction of iron ore, cyclone method, skull formation, pseudoliquid state, pseudogaseous state, diaphragm, suspended fountain layer

ABSTRACT: During the reduction of iron ore by the cyclone method, finely ground concentrates adhere to the chamber walls (skull formation). Iron content and mineralogic and granulometric compositions of the particles influence adherence properties. In order to overcome this difficulty, a suspended fountain layer process is used in which the raw material particles are observed in a pseudoliquid state, and the processed particles are apparently in a pseudogaseous state. This process can be carried out only using a diaphragm. Orig. art. has: 7 figures.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 14Apr62 DATE ACQD: 01Jul63 ENCL: 00
SUB CODE: 00 NO REF SOV: 007 OTHER: 000
Card 1/1 ls/wm

VAVILOV, N.S.

Methods of processing materials in suspension. Trudy Inst. met. no.12:29-40 '63. (MIRA 16:6)

(Furnaces, Heat-treating)
(Metallurgical furnaces)

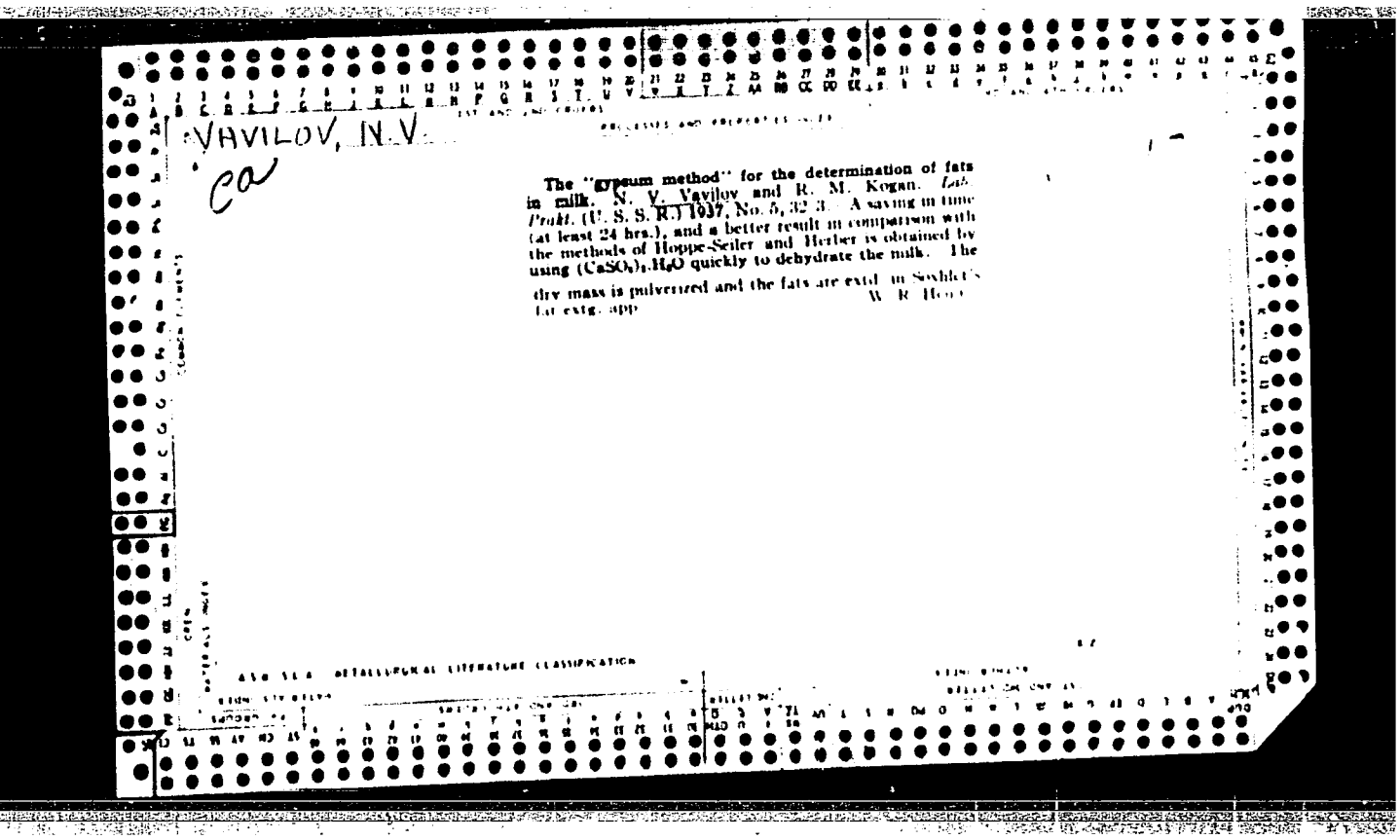
VAVILOV, N.S.; CHZHAO CHUN-CHZHI[Chao Ch'ung-chih]

Laboratory equipment for the investigation of physicochemical and gas dynamic processes in the treatment of iron ore materials in suspension with a fountain effect. Trudy Inst. met. no.12:41-44 '63. (MIRA 16:6)

(Iron--Heat treatment)
(Metallurgical laboratories--Equipment and supplies)

GESS, B.A.; KANAVETS, P.I.; VAVILOV, N.S.; MELENT'YEV, P.N.

Investigating the reduction of iron in carbonaceous ore granules. Trudy IGI 22:126-130 '63. (MIRA 16:11)

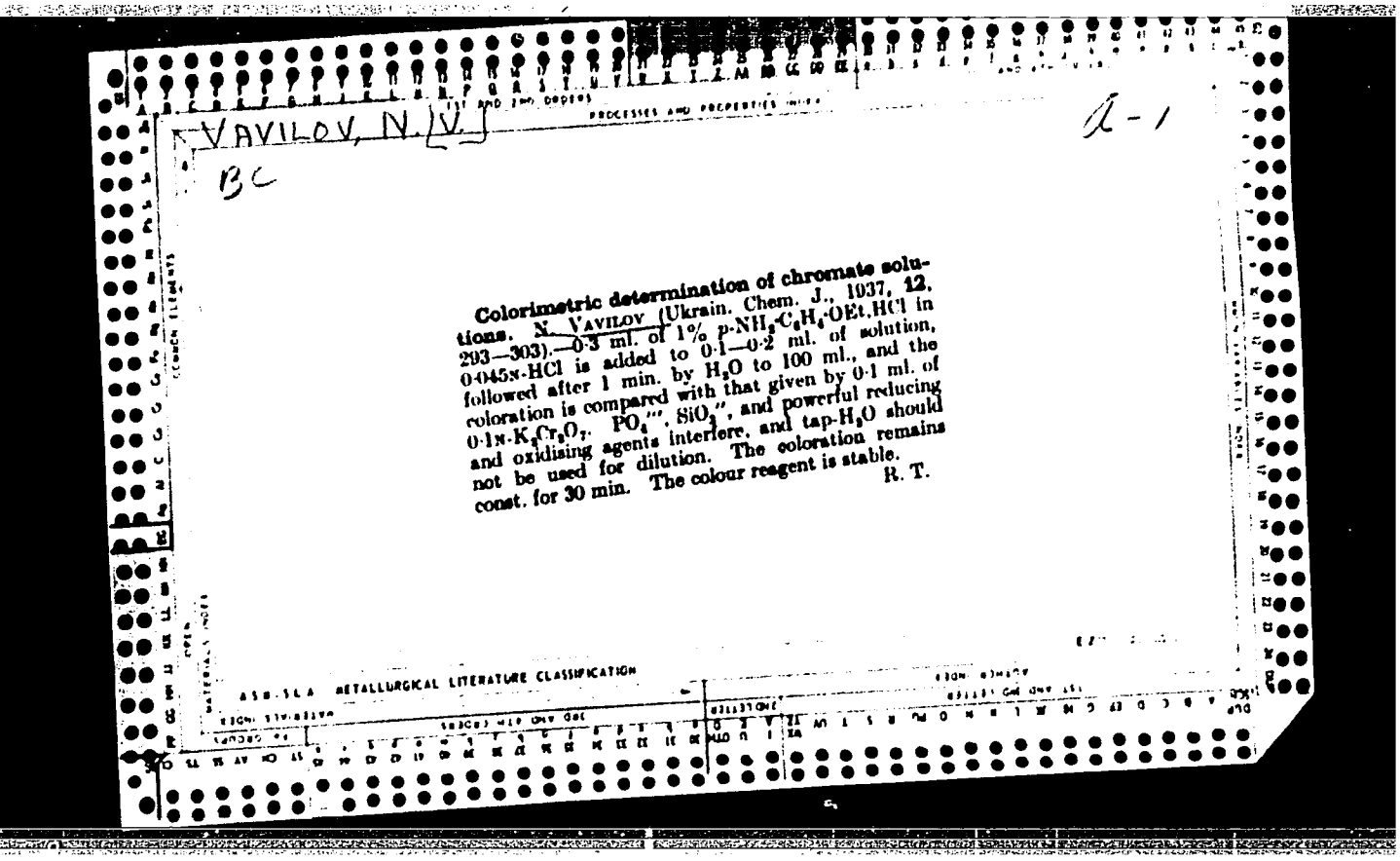


VAVILOV, N.V.

Ca

The "gypsum method" for the determination of fats in milk. N. V. Vavilov and R. M. Kogan. *Lab. Prakt.* (U. S. S. R.) 1937, No. 5, 32-3. A saving in time (at least 24 hrs.), and a better result in comparison with the methods of Hoppe-Seiler and Herter is obtained by using $(CaSO_4)_2.H_2O$ quickly to dehydrate the milk. The dry mass is pulverized and the fats are extd. in Soxhlet's [illegible] ext. app.

W. R. Hess



VAVILOV, N.[V.]

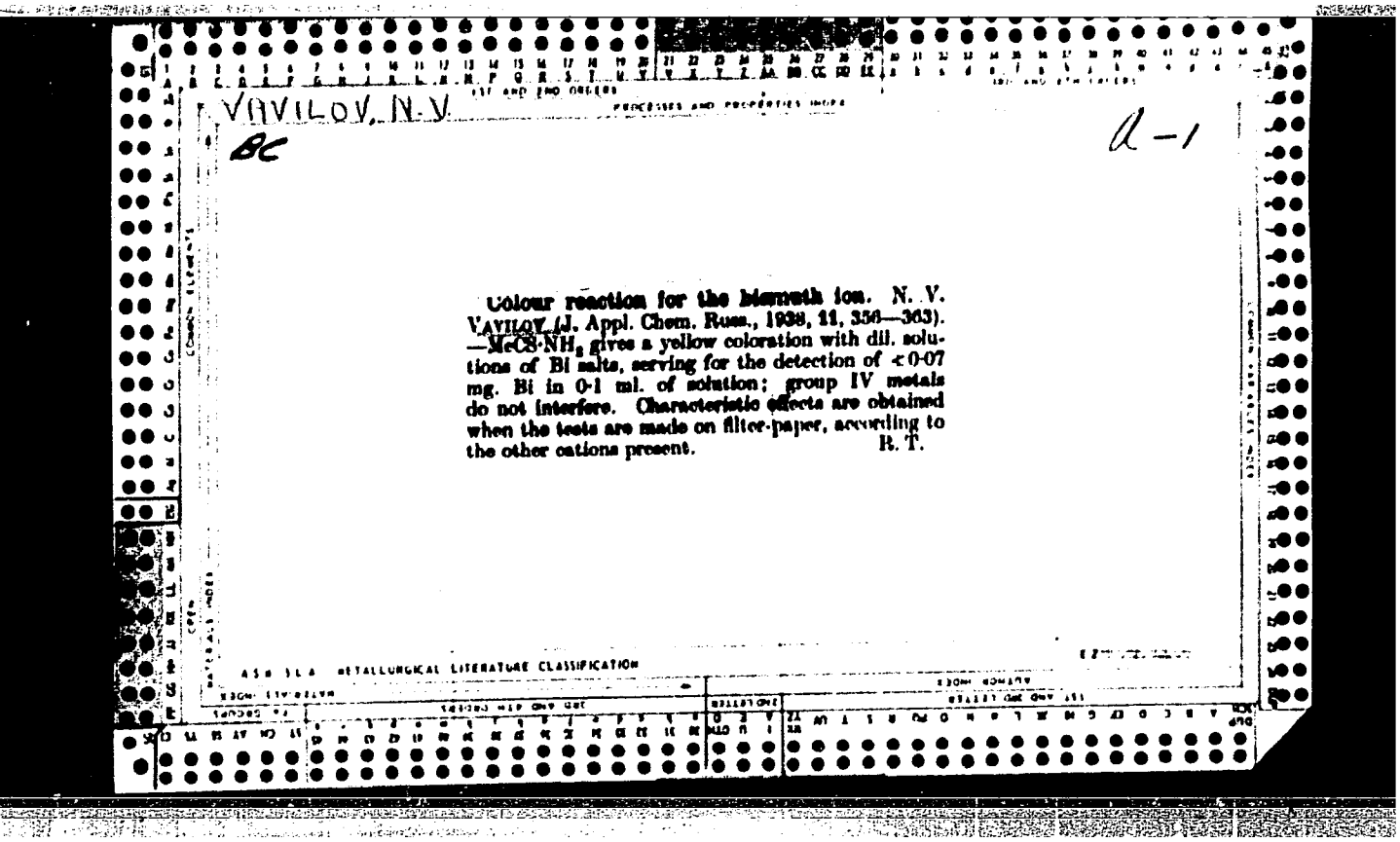
BC

A-1

Colorimetric determination of chromate solutions. N. VAVILOV (Ukrain. Chem. J., 1937, **12**, 293—303).—0·3 ml. of 1% p-$NH_2C_6H_4$·OEt,HCl in 0·045N-HCl is added to 0·1—0·2 ml. of solution, followed after 1 min. by H_2O to 100 ml., and the coloration is compared with that given by 0·1 ml. of 0·1N-$K_2Cr_2O_7$. PO_4''', SiO_3'', and powerful reducing and oxidising agents interfere, and tap-H_2O should not be used for dilution. The coloration remains const. for 30 min. The colour reagent is stable.

R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



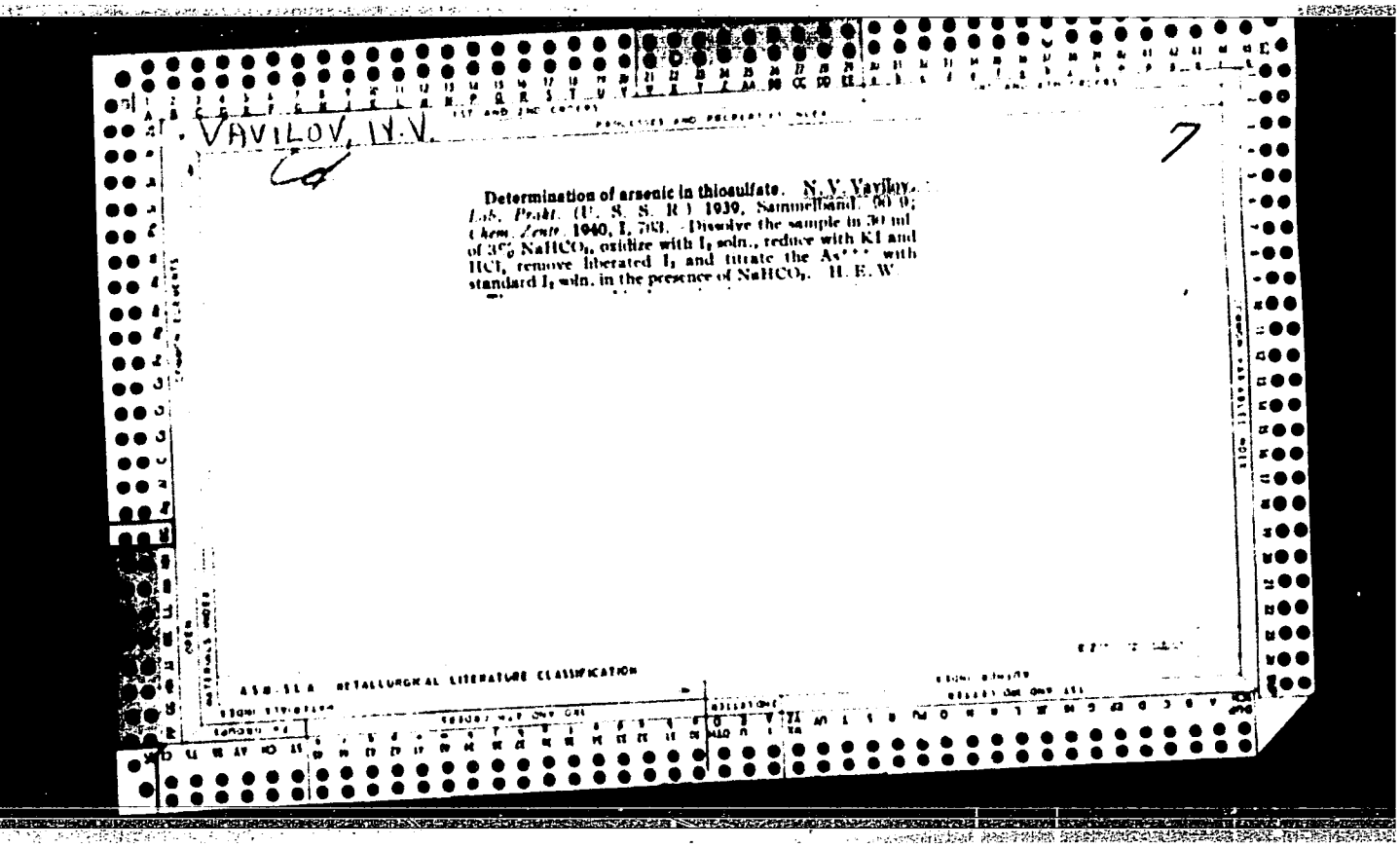
VAVILOV, N.V.

BC

a-1

Colour reaction for the bismuth ion. N. V. VAVILOV (J. Appl. Chem. Russ., 1938, 11, 356—363). —$MeCS{\cdot}NH_2$ gives a yellow coloration with dil. solutions of Bi salts, serving for the detection of $<0{\cdot}07$ mg. Bi in 0·1 ml. of solution; group IV metals do not interfere. Characteristic effects are obtained when the tests are made on filter-paper, according to the other cations present. R. T.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION


VAVILOV, N.V.

Determination of arsenic in thiosulfate. N. V. Vavilov. *Lab. Prakt.* (U. S. S. R.) 1939, Sammelband, 90-9; *Chem. Zentr.* 1940, I, 703. Dissolve the sample in 30 ml of 3% $NaHCO_3$, oxidize with I_2 soln., reduce with KI and HCl, remove liberated I_2 and titrate the As^{+++} with standard I_2 soln. in the presence of $NaHCO_3$. H. E. W.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

VAVILOV O.N.

Transition effects of the soft components of cosmic rays in lead. O. N. Vavilov (*Compt. rend. Acad. Sci. U.R.S.S.*, 1941, **32**, 202–206). The transition effects of the soft component of cosmic rays in Pb were determined at a height of 4200 m., by comparing the ionisation in a chamber when Pb absorbers were placed above and/or below it, with that when the absorbers were absent. The absorption curve in Pb differs from that obtained by previous observers, but resembles more closely the theoretical cascade curves. Experiments were also carried out with Al absorbers. A. J. M.

L 32405-65 EWT(m)/EWT(m)/EWP(v)/EWA(d)/EWP(t)/T-2/EWP(k)/EWP(b) Pf-4 JD/HW/RM

ACCESSION NR: AP4047166 S/0133/64/000/010/0914/0915

AUTHOR: Shin'ko, A.A. (Engineer); Vavilov, N.Yu.

TITLE: Roll pass design for [illegible] turbine vane billets

SOURCE: Stal', no. 10, 1964, 914-915

TOPIC TAGS: hot rolled billet, turbine vane, roll pass design, temperature

ABSTRACT: The application of hot rolled billets for the manufacturing of guiding vanes at the Khar'kov Turbine Plant (Khar'kovskiy turbinnyy zavod) resulted in a 50% saving of stainless steel and labor and a 41% cut in production cost. A special roll pass design had to be introduced to handle 12x150 mm strip. The authors recommend a diagonal arrangement of the parting lines in the rutting finishing passes where sizing is most unsymmetrical, a relative reduction of area in the thin part of the strip in the [illegible] exceeding that of the thicker part by 5 to 7% so as to compensate for the roll barrel during cooling, and a [illegible] rolling temperature [illegible] steel. Furthermore, particular

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L 32460-65
ACCESSION NR: AP4047166

attention should be given to the mounting and attachment of the delivery guides.
Orig. art. has: 2 figures.

ASSOCIATION: Ukrainskiy n.-i. institut metallov (Ukrainian Scientific Research Metals Institute)

SUBMITTED: 00 SUB CODE: MM

PA 57T71

VAVILOV, C. N.

USSR/Nuclear Phys - Gamma Rays Feb 1947
Nuclear Phys - Impact, Electronic

"Transition Effects of γ Rays and Their Influence on the Ionization Current in Ionization Chambers," C. N. Vavilov, I. M. Frank, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 12 pp

"Zhur Eksper i Teoret Fiz" Vol XVII, No 2

Made measurements of the transition effects of γ rays with use of flat thin-walled ionization chambers. Then enclosed chambers with layers of various substances (Pb, Fe, Al, cardboard), and total thickness of each of these substances remained the same during the entire experiment. In the measurements

57T71

USSR/Nuclear Phys - Gamma Rays (Contd) Feb 1947

the substances were transposed from one layer to the other so that the quantity of given substance on the layer next to the wall of the chamber would be variable. This made it possible to measure transition effects for the front and back walls of the chamber, and the equilibrium intensity of radiation in various substances with constant intensity of the first γ rays falling on the chamber.

57T71

VAVILOV, P., kand. sel'skokhoz. nauk

Science in the Komi A.S.S.R. Nauka i zhyttia 13 no.10:49-50 N '63. (MIRA 16:12)

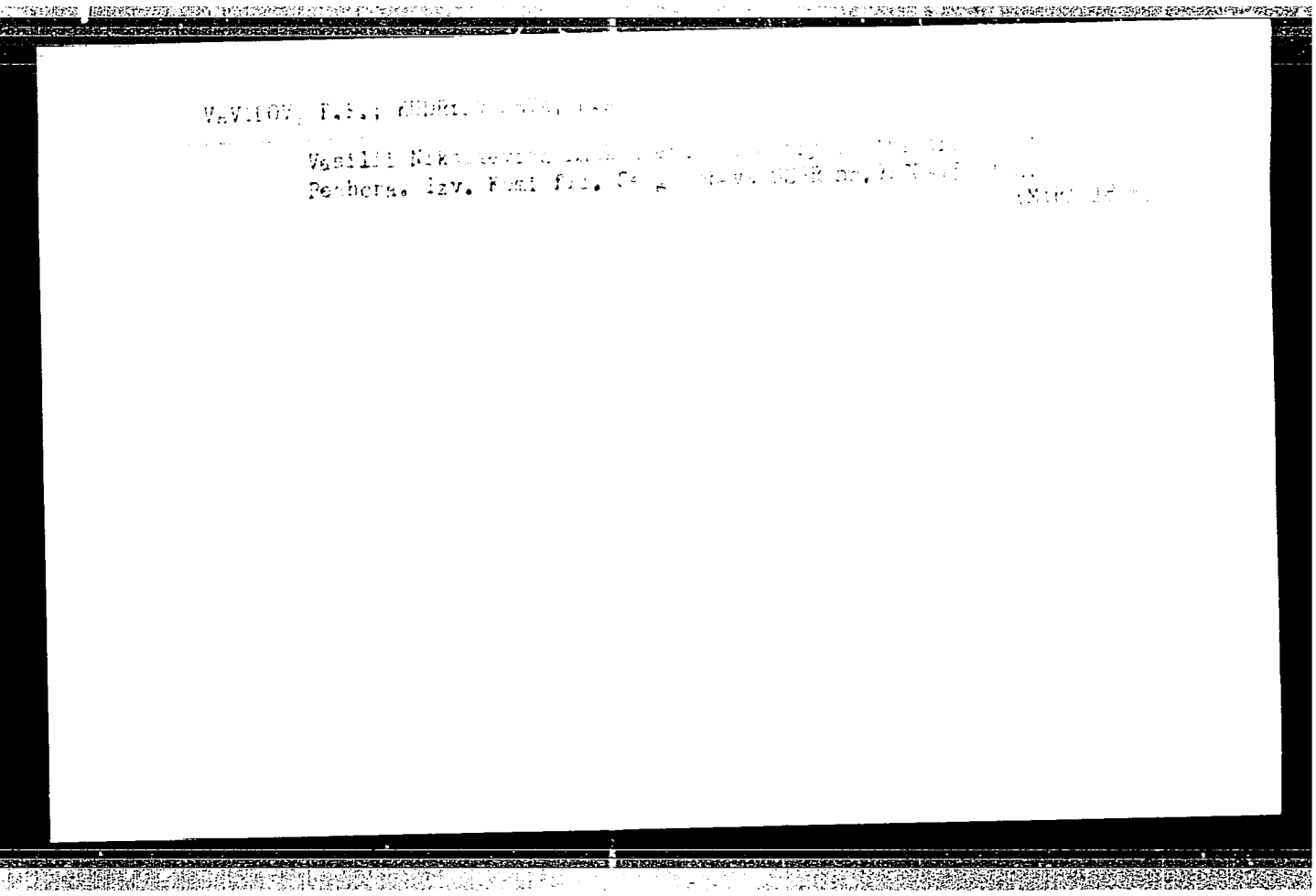
1. Predsedatel' prezidiuma Komi filiala AN SSSR.

VAVILOV, I. I.

Beinforced Concrete

Application of Stakhanovite methods in preparing metalwork for reinforced concrete. Biul.stroi.tekh. 9 no. 13, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.



S/205/63/003/001/026/029
E065/E485

AUTHORS: Vavilov, P.P., Verkhovskaya, I.N., Kondaneva, R.P., Popova, O.N.

TITLE: The growth and development of Vicia faba L. under conditions of increased U and Ra content

PERIODICAL: Radiobiologiya, v.3, no.1, 1963, 132-138

TEXT: To elucidate the relative importance of chemical and radiation effects of radioactive substances on plants, bean seedlings were grown in pots containing soil to which U (concentration 4×10^{-7}%) and Ra (1.06×10^{-7}%) had been added, while control plants were grown in pots containing normal turf soil; control and treated pots were placed in one of two trenches, one having normal background radioactivity (0.00004 r/hour) and the other with a radiation level of 0.002 r/hour, derived from U (10^{-2}%) and Ra (10^{-7}%) sources in the walls. Observations were made for several weeks on the growth and development of plants kept under the four different environments. The results showed that the U and Ra had an injurious effect on growth, retarding the upward growth of the stem and the formation of new leaves,

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The growth and development ...

reducing the general productivity (including fruit yield) and accelerating the processes of ageing. It was clearly shown that these effects were exerted when the U and Ra were not present in the soil and thus had no direct contact with the plants, indicating that their effects on growth are primarily associated with their radiation emissions rather than chemical properties. Analysis of plants grown on the supplemented soil indicated that Ra had been absorbed into the roots, leaves, stems and fruits, proving a source of chronic internal radiation. There was, however, evidence that chemical factors, particularly in the case of U, also influenced growth adversely in a distinctive manner. Reasons for the effects on growth of the very minute radiation doses applied in the investigation are discussed: the results are thought to indicate the need for a revision of the threshold doses currently accepted for higher plants. There are 2 figures and 3 tables.

ASSOCIATION: Laboratoriya radiobiologii Komi filiala AN SSSR, Syktyvkar (Radiobiology Laboratory, Komi Branch AS USSR, Syktyvkar)

Card 2/2 SUBMITTED: May 7, 1962

VAVILOV, N.I.
25704 Развитие

O Vliyanii Napravleniya Ryadkov Na Razvitie i Urozhay Sel'skokhozyaistvennykh Kul'tur. Sov. Agronomiya, 1948, No. 7, s. 77-84.--Bibliogr: 5 Nazv.

SO: LETOPIS NO. 30, 1948

VAVILOV, P.P., kand. sel'khoz. nauk, glav. red.; LAZAREV, N.A., kand. sel'khoz. nauk, zam. glav. red.; GALAS'YEV, V.A., red.; MOISEYEV, K.A., kand. biol. nauk, red.; PODOPLELOV, V.P., kand. ekon. nauk, red.; STARKOVA, V.N., kand. biol. nauk, red.; TARASENKOV, G.H., kand. geogr. nauk, red.; TON, D.S., kand. ekon. nauk, red.; TIKHONOVA, N.V., red.izd-va; VDOVINA, V.M., tekhn. red.

[Forests and the lumbering industry in the Komi A.S.S.R.] Lesa i lesnaia promyshlennost' Komi ASSR. Moskva, Goslesbumizdat, 1961. 394 p. (MIRA 16:4)

1. Akademiya nauk SSSR. Komi filial, Syktyvkar.
(Komi A.S.S.R.--Forests and forestry)

SOV/30-58-11-41/48

30(5), 30(1)

AUTHOR: Vavilov, P. P., Candidate of Agricultural Sciences

TITLE: Problems of the Complex Exploitation of Natural Resources of the North-East of Europe (Problemy kompleksnogo ispol'zovaniya prirodnykh resursov yevropeyskogo Severo-Vostoka) Conference in Syktyvkar (Konferentsiya v Syktyvkare)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 11, pp 126-128 (USSR)

ABSTRACT: The conference was held from July 3 to 7 and was dedicated to questions concerning the exploitation of the natural resources of the Komi ASSR and the neighboring territories of the Nenetskiy nats. okrug as well as of the Northern Ural. It had been convened by the Komi Branch of the AS USSR and the Sovet narodnogo khozyaystva Komi ekonomicheskogo administrativnogo rayona (Komi Council on National Economy of the Economic Administrative District). More than 400 representatives of scientific institutions, planning offices and industrial organizations from Moscow, Leningrad, Ural, Kuzbass, the Republic of Komi and other cities and regions attended to it. The First Secretary of the Komi Regional Committee of the KPSS, A. G. Dmitrin, opened the conference. Speakers were:

Card 1/4

Problems of the Complex Exploitation of Natural Resources of the North-East of Europe. Conference in Syktyvkar

Ye. I. Lopukhov, Deputy Chairman of the Komi Council on National Economy, and B. L. Afanas'yev, Head of the Komi-Nenetskaya Geological Administration, on the natural resources of the Komi ASSR and their exploitation.
V. A. Vityazeva, Candidate of Geographic Sciences, on the first-rate coking coal of the Pechora Basin.
A. Ye. [illegible], Ural'skiy filial Akademii nauk SSSR (Ural Branch of the AS USSR) on the economic advisability of transporting the Pechora coking coal to the Ural as well as the construction of a direct railroad line.
D. S. Ton, Candidate of Economic Sciences, on the necessity of further mechanization and automation in the production processes to increase output and reduce production costs of Pechora coal.
S. F. Vasil'yev, Candidate of Technical Sciences, Institut goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Combustible Minerals of the AS USSR) on the prospects of developing the chemical industry of the district.
A. L. Rabkina, Candidate of Economic Sciences, Institut nefti Akademii nauk SSSR (Institute of Mineral Oils of the AS USSR)

Card 2/

Problems of the Complex Exploitation of Natural Resources of the North-East of Europe. Conference in Syktyvkar

V. A. Speysher, Energeticheskiy institut im. G. M. Krzhizhanovskogo Akademii nauk SSSR (Institute of Energetics imeni G. M. Krzhizhanovskiy of the AS USSR) on ways of utilizing the gases of the cracking process and the waste gases of soot formation. M. N. Sprintsin (Giprolespromm) on further prospects of development in the lumber industry and the complete exploitation of lumber as a raw material. V. P. Vasil'yev (Giprotranstei), Ya. V. Kupriyanov (Giprorechtrans), A. P. Smirnov, Institut kompleksnykh transportnykh problem Akademii nauk SSSR (Institute of Complex Transportation Problems of the Academy of Sciences, USSR) on the development of the transportation system of the European North-East of the USSR. V. N. Deryagin, Deputy Chairman of the Gosplan Komi ASSR, on the creation and maintenance of permanent qualified working staffs in the sparsely-[illegible] populated districts of the republic. The conference adopted a resolution outlining both the essential paths of development of the entire economy in the district as well as definite measures to be adopted for the advancement of important branches of industry, construction, and transportation.

Card 3/4

Problems of the Complex Exploitation of Natural Resources of the North-East of Europe. Conference in Syktyvkar

30V/30-58-11-41/48

Practical suggestions were made for the establishment of large enterprises in the field of chemistry, paper cellulose, hydrolysis and others; where processing industries must be given priority over those producing rawmaterials. Scientific research in the field of geology, chemistry, the exploration and utilization of reserves lying dormant in the industries themselves and the efficient distribution of productive labor should be emphasized.

Card 4/4

POPOVA, O.N.; KODANEVA, R.P.; VAVILOV, P.P.

Distribution of the radium absorbed from the soil in plants. Fiziol. rast. 11 no. 3:436-441 '64. (MIRA 17:7)

1. Institut biologii Komi filiala AN SSSR, Syktyvkar.

ROCHEV, N.N., glav. red.; VAVILOV, P.P., red.; VERTEL', E.I., red.; GORELIK, A.I., red.; GUZMAN, I.S., red.; KUZNETSOV, G.N., red.; MEDVEDEV, G.A., red.; MODYANOV, Ya.V., red.; PANTELEYEVA, A.A., red.; POLYAKOV, V.V., red.; POPOV, S.A., red.; POPOVA, S.M., red.; RAYEVSKIY, S.S., red.; RUDAKOV, S.V., red.; SYUTKIN, A.F., red.; USOV, A.I., red.; USTINOVA, I.K., red.; SHKIL', P.T., red.; CHEBYKIN, N.P., red.; MEZENTSEV, S.A., red.; MOROZOV, V.S., red.; OPLESNIN, I.I., tekhn. red.

[Forty years of the Komi A.S.S.R., 1921-1961; studies on the cultural and economic development of the Komi Republic]40 let Komi ASSR, 1921-1961; ocherki o razvitii ekonomiki i kul'tury Komi Respubliki. Syktyvkar, Komi knizhnoe izd-vo, 1961. 154 p. (MIRA 14:11)
(Komi A.S.S.R.--Economic conditions) (Komi A.S.S.R.--Culture)

VAVILOV, P.P.; CHEBYKINA, N.V.

Effect of different green-fallow crops on the intensity of soil respiration. Trudy Komi fil. AN SSSR no.9:33-36 '60. (MIRA 15:1)

(GASES IN SOILS) (FIELD CROPS)

VAVILOV, P.P.

Solving the Ural-Pechora problem is a most important objective in the national economy. Trudy Komi fil.AN SSSR no.8:3-7 '59. (MIRA 13:11)

1. Predsedatel' Prezidiuma Komi filiala AN SSSR.
(Pechora Basin—Coal mines and mining)

VAVILOV, P.P.; VITYAZEVA, V.A.

The Komi Branch of the Academy of Sciences of the U.S.S.R. (MIRA 14:12)
Izv. AN SSSR. Ser. geog. no.6:130 N-D '61.
(Komi A.S.S.R.—Geographical research)

VAVILOV, P.P.; POPOVA, O.N.; KODANEVA, R.F.

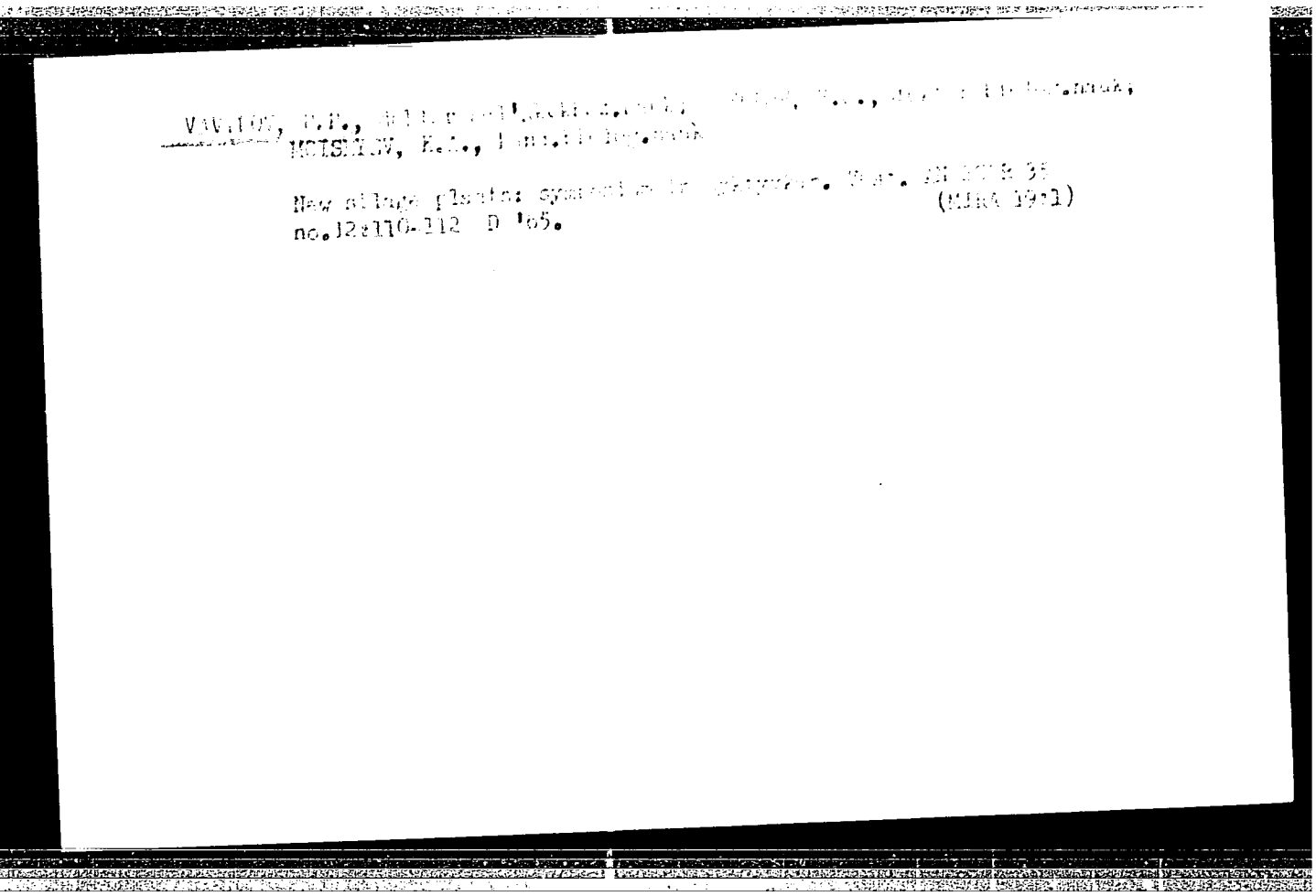
Radium behavior in plants. Dokl. AN SSSR 157 no.4:992-994 Ag '64 (MIRA 17:8)

1. Institut biologii Komi filiala AN SSSR. Predstavleno akademikom N.M. Sisakyanom.

VAVILOV, P.P.; MOISEYEV, K.A.

Introduction of silage plants and their propagation on state and collective farms of the Komi A.S.S.R. Biul.Glav.bot.sada no. 48: 3-11 '63. (MIRA 17:5)

1. Komi filial AN SSSR, gorod Syktyvkar.



L 30097-66 EWT(m)
ACC NR: AP6012875 SOURCE CODE: UR/0205/66/006/002/0278/0283 49 B

AUTHOR: Vavilov, P. P.; Verkhovskaya, I. N.; Popova, O. N.; Kodaneva, R. P.

ORG: Komi Branch, AN SSSR, Syktyvkar (Komi filial AN SSSR); Institute of Biochemistry im. A. N. Bakh, AN SSSR, Moscow (Institut biokhimii AN SSSR) 19

TITLE: The depressant effect of small doses of ionizing radiation on growing plants

SOURCE: Radiobiologiya, v. 6, no. 2, 1966, 278-283

TOPIC TAGS: ionizing radiation, radiation plant effect, plant physiology, plant growth, gamma irradiation

ABSTRACT: In view of previous findings that the growth of Vicia faba is significantly delayed in areas with large deposits of uranium or radium, similar experiments were carried out over a 2-year period with spring wheat and spring barley grown in experimental plots under the influence of gamma radiation from U and Ra ore (radiation dose of 0.005 — 0.1 r/day). The height, internodes, dry weight, number of heads, and number of grains per head were measured in both experimental and control plots. Although radiation had no

UDC: 58.039.1

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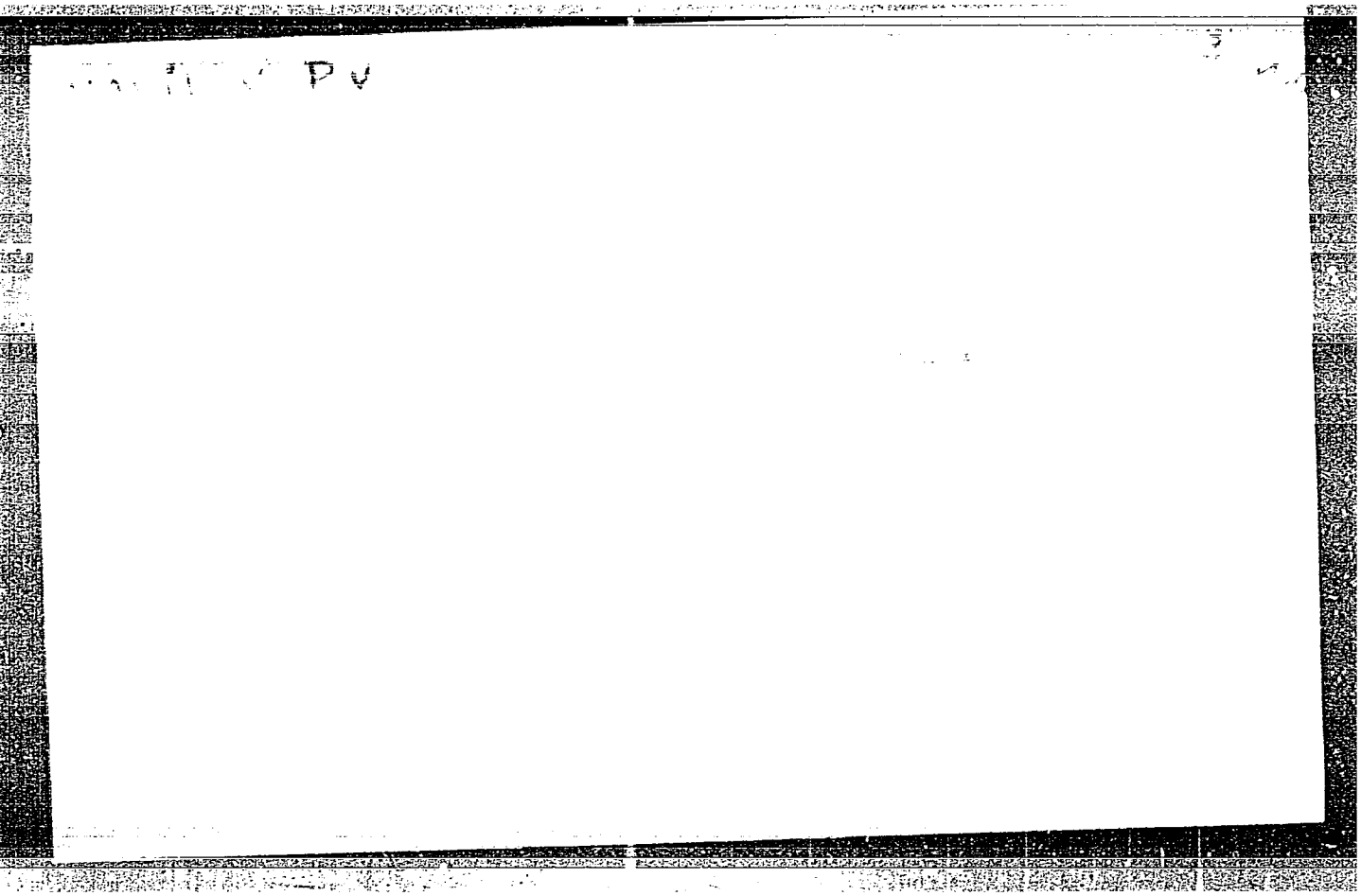
L 30097-66
ACC NR: AP6012875

significant effect on germination rate of either wheat or barley, it produced a marked delay in heading and tillering and thus significantly decreased the biological productivity of the crops. The authors are deeply grateful to the members of the Radiophysics Group, Department of Radiobiology, Institute of Biology, Komi Branch, AN SSSR (Radiofizicheskaya gruppa otdela radiobiologii Instituta biologii Komi Filiala AN SSSR) for their assistance in the work. Orig. art. has: 2 figures and 3 tables. [08]

SUB CODE: 06 / SUBM DATE: 27Nov64 / ORIG REF: 007 / OTH REF: 006/ ATD PRESS: 5012

Card 2/2



VAVILOV, P.V.

C-3

Category : USSR/Nuclear Physics - Elementary Particles

Abs Jour : Ref Zhur - Fizika, No2, 1957 No 3149

Author : Vavilov, P.V.
Title : Radiative Decay of Λ^0-Particles

Orig Pub : Zh. eksperim i teor. fiziki, 1956, 30, No 5, 985-987

Abstract : An investigation is made of the effect of the spin of a Λ^0 particle on the form of the spectrum of the gamma quanta, produced during its radiative decay $\Lambda^0 \to p + \pi^- + \gamma$. The disintegration probabilities are calculated in the first order of the perturbation theory for two variants. The spin of the Λ^0 particle is assumed to be $\frac{1}{2}$ in the first and 3/2 in the second (in this case the Rarita-Schwinger equation is used to describe the Λ^0 particle). The result of the calculations show that the spin of the Λ^0 particle affects the form of the spectrum. This effect manifests itself particularly at large photon frequencies and is not significant at low frequencies.

Card : 1/1

56-4-34/52

AUTHOR P.V. VAVILOV

TITLE Ionization Losses of Heavy Particles with High Energies. (Ionizatsionnyye poteri tyazhelykh chastits bol'shikh energiy. Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 32, Nr 4, pp 920-923 (USSR)

ABSTRACT The present paper furnishes the exat solution of the problem of ionization losses of heavy particles in "thin absorbers" (i.e. for the case that the ionization losses are lower than the initial energy of the particles). A charged particle loses its energy when passing through matter by collisions with the electrons of the atoms. As the various collisions are independent phenomena, the energy losses may fluctuate. The kinetic equation for the distribution function is given. The probability of the losses may here be regarded as independent of the energy E of the final state. Further $\omega(\varepsilon) = 0$ at $\varepsilon > \varepsilon_{max}$ is assumed, here, where ε_{max} denotes the maximum energy transferable during an impact. LAPLACE'S transformation is used for the solution of this kinetic equation. The exact solution is then given explicitly and transformed.

For the special case $\varkappa = 0$ ($\varkappa$ is one of the coefficient

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Ionization Losses of Heavy Particles with High Energies.

occuring in the rather long expressions) LANDAU'S solution is obtained. Here, however, the case $\varkappa \gtrsim 1$ is investigated. The determination of the maximum of the distribution function is given in short. All numerical computations were carried out in the laboratory for controlable machines and systems of the Academy of Science of the U.S.S.R.
According to the value of $\varkappa$ either various approximations may be used or the exact solution has to be determined.
(2 Illustrations.)

ASSOCIATION: not given.
PRESENTED BY: -
SUBMITTED: 17.2. 1956.
AVAILABLE: Library of Congress.

CARD 2/2

VAVILOV P.V.

AUTHOR VAVILOV, P.V.,

TITLE The Bubble Chamber. 56-6-37/56
(O puzyr'kovoy kamere, -Russian)

PERIODICAL Zhurnal Eksperim. i Teoret.Fiziki,1957, Vol 32, Nr 6, pp 1367-1368 (U.S.S.R.)

ABSTRACT The mechanism of the production of bubbles on the occasion of the passage of a particle through an overheated liquid has hitherto not been explained.In the present paper it is assumed that the production of bubbles is essentially a thermal process; the author here investigates an overheated liquid.It is known that for every metastable phase there exist certain minimum measures which an accumulation of another phase must have in order that this other phase be more stable than the primary phase. On the occasion of the passage of a charged particle through matter δ-electrons of various energies are produced which lose their energy on a compoaratively short path. The author here assumes the following: The total energy of a δ-electron is separated in form of heat, and for the production of a bubble it is necessary to concentrate an energy of the order E_{min} within a domain of the order of magnitude of the dimensions of the bubbles.If the production of the bubble is assumed to be isothermal, one obtains $E_{min} = Nq + pV + 4\pi r_{min}^2 \alpha$. The liquid is in this case assume d to be slightly overheated.For the determination of the number N of the vapor molecules in the bubble the equation of state of the perfect gas can be used.Under these circumstan-

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ces the expression $E_{min} = \left[16 \pi a^3/(p_0-p)^2 \right]\left[1+2p_0(p/p_0 + q/kT)/3(p-p_0)\right]$.
is obtained for E_{min}. Here a denotes the surface tension, p_0-the pressure in the case of a plane separating surface, p- the pressure in the overheated liquid, q - the evaporation heat per molecule, T -the temperature of the overheated liquid. The δ-electrons with different energies will produce bubbles with different radii. Eventually, the electron will then be able to produce several bubbles at an energy E'. However, such δ-electrons leave visible traces which branch off from the trace of the ionizing particle.Therefore they need not form part of the discussion. It is thus necessary to find the number of δ-electrons with the energy $E_{min} \leqslant E \leqslant E'$; a corresponding expression is given. It is a characteristic feature of this expression that it is highly dependent on the degree of overheating.
(No illustrations).

ASSOCIATION Not Given.
PRESENTED BY
SUBMITTED 29.11.1956
AVAILABLE Library of Congress.
Card 2/2

VAVILOV, P.V.

56-4-46/52

AUTHOR: VAVILOV, P.V.

TITLE: The Cross Sections of the Interaction of Pions with Nucleons at High Energies.
(Secheniye vzaimodeystviya π-mezonov s nuklonami pri bol'shikh energiyakh. Russian.)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 4, pp 940 - 941 (U.S.S.R.)

ABSTRACT: This cross section, as is known, tends towards a certain boundary value at high energies, which is due to the finity of the nucleons. (The author here neglects COULOMB'S interaction). For the computation of this boundary value the author here makes use of the dispersion relations, which connect the imaginary part with the real part of the amplitude of scattering in the angle zero. The following expression is, for instance, obtained for the scattering of negative mesons with protons:

$$\mathrm{Imf}_-(\omega) = \frac{1}{2}\,\mathrm{Imf}_-(\mu)\left(1+\frac{\omega}{\mu}\right)+\frac{1}{2}\,\mathrm{Imf}_+(\mu)\left(\frac{\omega}{\mu}-1\right) + \frac{\omega^2-\mu^2}{\pi}\,P\int_0^\infty \frac{d\omega'}{\omega'^2-\mu^2}$$

$$\left[\frac{\mathrm{Ref}_+(\omega)}{\omega'+\omega} - \frac{\mathrm{Ref}_-(\omega')}{\omega'-\omega}\right] - \pi\sum_k \delta(\omega_k-\omega)\,\mathrm{Resf}_-(\omega_k)$$

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The Cross Sections of the Interaction of Pions with Nucleons at High Energies.

It was taken into account here that the amplitude may have poles at the points ω_k. (The residuals Resf_- are real). In this formula P denotes the main value of the integral; the integral is taken in the sense of the main value not only in those cases in which the denominator becomes zero, but also in the poles of the function $f_\pm$.

If in the above mentioned formula ω tends towards ∞,

$q_\infty = 4P \int_0^\infty \frac{d\omega}{\omega^2 - \sigma_\mu^2} \operatorname{Re}\left[f_+(\omega) + f_-(\omega) - f_+(\sigma_\mu) - f_-(\sigma_\mu)\right]$ is obtained. The expression just given is symmetric with respect to f_+, and therefore the boundary value of the cross section is equal for both positive and negative mesons. The domain of integration in the formula mentioned above is split into domains $0 \leqslant \omega \leqslant \sigma_\mu$ and $\sigma_\mu \leqslant \omega \leqslant \infty$

After some more transformations the following is obtained:

$\sigma_\infty = -1,5 + I_0 + I_1$;

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56-4-46/52

The Cross Sections of the Interaction of Pions with Nucleons at High Energies.

$$I_0 = \frac{1}{\pi^2} \int_0^{\infty} \frac{dE}{\sqrt{E(E+2\mu)}} \ln \frac{E+2\mu}{E} \left[\sigma_+(E) + \sigma_-(E)\right],$$

$$I_1 = 4\lambda^2 \int_0^{\infty} \frac{dx}{x(x+2)} \frac{1}{\lambda} \mathrm{Re}(f_+(x) + f_-(x) + 0{,}04(1 + \mu/M), \quad x = E/\mu.$$

For the computation of the integrals the author used the experimental values for $\sigma_+(E)$ and $\mathrm{Re}\, f_+(x)$. The values $I_0 = 20$ millibarn and $I_1 = 11{,}5$ millibarn are obtained for the integrals. By insertion of the sum given above, $\sigma_\infty = 30$ millibarn is obtained, which agrees with experimental data. The accuracy of σ_∞ is restricted by the accuracy of the experimental data for $\mathrm{Re}\, f_\pm$, $\sigma_\pm$.

(No illustrations.

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED: January 17, 1957
AVAILABLE Library of Congress
Card 3/3

Vavilov, P.V.

USSR/Nuclear Physics - Passage of Charged and Neutral Particles Through Matter. C-6

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 541

Author : Vavilov, P.V.
Inst : -
Title : Ionization Losses of Heavy Particles of Large Energies.

Orig Pub : Zh. eksperim. i teor. fiziki, 1957, 32, No 4, 920-923

Abstract : An exact solution is obtained for the problem of the ionization losses of heavy particles in "thin absorbers," i.e., when the ionization losses are much less than in the initial energy of the particle. The solution obtained is investigated for various values of the parameter $\varkappa$ ($\varkappa$ is proportional to the ratio of the average energy loss per unit length to the maximum energy transferred during the time of one collision). It is shown that when $\varkappa \to 0$, the solution goes into the curve of L. D. Landau (Journal of Physics, USSR, 1944, 8, 204). Plots are given for the

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USSR/Nuclear Physics - Passage of Charged and Neutral Particles Through Matter C-6

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 541

is the Airy function, tabulated by V.A. Fock (Tables of Airy Functions, Moscow, 1949). It is shown that when $\chi \to \infty$, (1) goes into the gaussian curve.

Card 3/3

VAVILOV, S.

Mikrostruktura Sveta (Microstructure of Light -Essays)

197 p. 1.25

SO: Four Continent Book List, April 1954

VAVILOV, S.; LUDCHENKO, A.

Potentialities for increasing the durability of tires. Avt.transp. 41 no.11:6 N '63. (MIRA 16:12)

1. Direktor Tarashchanskogo avtoparka Kiyevskogo oblastnogo avtomobil'nogo tresta (for Vavilov). 2. Glavnyy inzhener Tarashchanskogo avtoparka Kiyevskogo oblastnogo avtomobil'nogo tresta (for Ludchenko).

VAVILOV, S.

Stop negligence and dishonesty. Grazhd. av. 20 no.9:24 S '63. (MIRA 16:8)

1. Glavnyy bukhgalter Glavnogo upravleniya Grazhdanskogo vozdushnogo flota.
(Aeronautics, Commercial)

VAVILOV, S.

VAVILOV, S., inzhener.

Shortening the lay-off period of ships for boiler cleaning. Mor. i rech.flot 14 no. 7:15-16 Jl '54. (MLRA 7:7)
(Ships--Maintenance and repair) (Steam boilers, Marine)

YAVLOV, S. I.

Received 1951

28(2) PHASE I BOOK EXPLOITATION SOV/2712

Akademiya nauk SSSR

Perevodnaya mashina P.P. Troyanskogo; sbornik materialov o perevodnoy mashine dlya perevoda s odnogo yazyka na drugiye, predlozhennoy P.P. Troyanskim v 1933 g. (P.P. Troyanskiy's Translation Machine; Collection of Materials on a Translation Machine for Translating One Language Into Others, Proposed by P.P. Troyanskiy in 1933) Moscow, Izd-vo AN SSSR, 1959. 52 p. 2,000 copies printed.

Ed.: D.Yu. Panov; Ed. of Publishing House: K.P. Gurov; Tech. Ed.: S.G. Markovich.

PURPOSE: This book is intended for readers interested in problems of machine translation.

COVERAGE: This publication describes the work of the late P.P. Troyanskiy, who invented an automatic translation machine in the early 1930's. The volume contains two articles taken from Troyanskiy's manuscripts and comments on these by members of a commission set up by the Presidium of the Academy of Sciences of the USSR in 1957 to study his work. The first

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article deals with the linguistic principles of automatic translation, and comments are presented by I.K. Bel'skaya. The second article describes the technical characteristics of a translating machine. The official patent specifications for the machine are reproduced. Comments on the technical aspects are presented by D.Yu. Panov and L.N. Korolev. There are no references.

TABLE OF CONTENTS:

II. TECHNICAL MATERIAL

AVAILABLE: Library of Congress

VAVILOV, S.I.

Galilei's role in the history of optics. Usp. fiz. nauk 83 no.4:583-615 Ag '64. (MIRA 17:9)

VAVILOV, S.I.

From the opening speech at the solemn session on the occasion of the centennial anniversary of N.E. Zhukovskii's birth (January 17, 1947). Trudy Inst.ist.est.i tekh. 17:93-95 '57. (MIRA 10:7)

(Zhukovskii, Nikolai Egorovich, 1947-1921)

VAVILOV, S.I.

Meetings with T.P. Kravets. Trudy Inst.ist.est.i tekh. 17:96-99 '57. (MIRA 10:7)

(Kravets, Torichan Pavlovich, 1876-)

VAVILOV, S.I.

Report and speeches at the first plenum of the Commission on the History of the Academy of Sciences of the U.S.S.R. Trudy Inst.ist.est.i tekh. 17:100-107 '57. (MLRA 10:7)
(Academy of Sciences of the U.S.S.R.--History)

ARBUZOV, A.Ye., akad.; VAVILOV, S.I., akad.; VOL'FKOVICH, S.I., akad.; KOCHINA, P.Ya., akad.; LANDSBERG, G.S., akad.; LEYBENZON, L.S., akad.; PORAY-KOSHITS, A.Ye., akad.; SMIRNOV, V.I., akad.; FESENKOV, V.G., akad.; CHERNYAYEV, V.I., akad.; KAPUSTINSKIY, A.F.; KORSHAK, V.V.; KRAVKOV, S.V.; NIKIFOROV, P.M.; PETROV, A.D.; PREDVODITELEV, A.S.; FRISH, S.E.; CHETAYEV, N.G.; CHMUTOV, V.K.; SHOSTAKOVSKIY, M.F.; KUZNETSOV, I.V., red.; MIKULINSKIY, S.R., red.; MURASHOVA, N.Ya., tekhn.red.

[Men of Russian science; ossays on prominent persons in natural science and technology: Mathematics, mechanics, astronomy, physics, chemistry] Liudi russkoi nauki; ocherki o vydaiushchikhsia deiateliakh estestvoznaniia i tekhniki: matematika, mekhanika, astronomiia, fizika, khimiia. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 599 p. (MIRA 14:10)

1. Chleny-korrespondenty AN SSSR (for Kapustinskiy, Korshak, Kravkov, Nikiforov, Petrov, Predvoditelev, Frish, Chetayev, Chmutov, Shostakovskiy). (Scientists)

Released 1951

PHASE I BOOK EXPLOITATION SOV/5537

Vavilov, Sergey Ivanovich, Academician

Glaz i Solntse. O"teplom" i "kholodnom" svete (The Eye and the Sun. On "Warm" and "Cold" Light) Moscow, 1961. 156 p. 15,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Ed. of Publishing House: Ye. M. Klyaus; Tech. Ed.: G. A. Astaf'yeva.

PURPOSE: This book is intended for the general reader. Its publication was approved by the Editorial Board for Popular Scientific Literature of the Academy of Sciences, USSR.

COVERAGE: In this work the author analyzes the Sun as a source of light, and deals in particular detail with the problem of "cold light" or luminescence, which he regards as the light of the future. The first part of the book was originally published in 1927 and has been republished six times since. The present edition is based on Volume IV (1956) of the collected works of

Card 1/3

Academician S. I. Vavilov. Glaz i Solntse, and the book Mikrostruktura sveta (Microstructure of Light) were awarded the Stalin Prize in 1951. No personalities are mentioned. A list of twelve recommended books on luminescence is appended.

TABLE OF CONTENTS:

VAVILOV, S.I.

Old and new physics. Ist. i metod. est. nauk no.3:3-12 '65.
(MIRA 18:12)

VAVILOV, S. P.

Feed Water Purification

Thermochemical softening of boiler water on river boats. Rech. transp., 12, No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

VAVILOV, Sergey Ivanovich (g.Yoshkar-Ola); KUZNETSOV, I.V., otv.red.; KLYAUS, Ye.M., red.izd-va; RYLINA, Yu.V., tekhn.red.

[Isaac Newton; scientific biography and articles] Isaak N'iuton; nauchnaia biografiia i stat'i. Moskva, Izd-vo Akad.nauk SSSR, 1961. 293 p. (MIRA 14:2)
(Newton, Sir Isaac, 1642-1727)

VAVILOV, V.

Merited punishment. Kryl. rod. 15 no.10:30 O '64. (MIRA 18:1)

1. Otvetstvennyy sekretar' Federatsii aviatsionnogo sporta SSSR.

SOV/85-58-11-7/33

AUTHOR: Vavilov, V., Chief Judge of Competitions

TITLE: Helicopters in the Sky (V nebe vertolety)

PERIODICAL: Kryl'ya rodiny, 1958, Nr 11, pp 6-8 (USSR)

ABSTRACT: The author describes the various exercises and individual performances of pilots who flew helicopters during the 1958 Spartacus Games. The performance (record) of the team representing the Tsentral'naya planernovertoletnaya shkola (Central Glider and Helicopter School) is favorably commented upon. There are 6 photographs showing the various team winners which include: The VVS-1 team with M. Yevstaf'yev, Captain; M. Basargin and V. Savin; and the team of the Central Glider and Helicopter School consisting of V. Kostin, S. Golubev, Captain, and G. Pavlenko. Also shown are: V. Ryakhovskiy, Master of Sports, USSR Champion in Helicopter Sports, N. Obodovskiy, USSR Champion in Helicopter Sports, and F. Belushkin, absolute USSR Champion in Helicopter Sports, the latter representing TsAK.

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VAVILOV, V.

The first championship of the world in Bratislava. Kryl. rod. 11 no. 12:12-13 D '60. (MIRA 14:3)
(Bratislava--Aeronautics--Competitions)

VAVILOV, V.

Following up our articles. Kryl.rod. 13 no.4:19 Ap '62.
(MIRA 15:5)

1. Predsedatel' byuro Vsesoyuznoy sektsii vertoletnogo sporta.

(Aerial sports)

VAVILOV, V.

If conditions should become more complicated. Kryl.rod. 13 no.11:20-21 N '62. (MIRA 15:12)

1. Predsedatel' Vsesoyuznoy sektsii vertoletnogo sporta.
(Aerial sports) (Helicopters)

VAVILOV, V.

Greater activity in the work of various sections. Kryl. rod. 8 no.5:8-9 My '57. (MLRA 10:6)

1. Nachal'nik aviatsionno-sportivnogo otdela TSentral'nogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR.
(Military education)

VAVILOV, V.

"Heavy industry is the basis of the economic might and the defense capacity of our country. Tyl i snab. Sov. Voor. Sil 21 no.12::2-17 D '61. (MIRA 15:1)

(Russia--Economic policy)

VAVILOV, V.A.; LIVSHITS, I.A.; MAYZEL', B.I.; OKUN', B.TS.

Outfit for flow coat painting with subsequent exposure in vapors of a solvent. Lakokras. mat. i ikh prim. no.6:67-70 '61. (MIRA 15:3)

(Painting—Equipment and supplies)

SHARUTIN, A.S.; VAVILOV, V.G.; GUSEYNOV, I.S.

Control of circulating fluid losses in wells of the Oil Field Administration of the Lenin Petroleum Trust. Trudy AzNII DN no.10:294-304 '60. (MIRA 14:4)
(Azerbaijan—Oil well drilling fluids)

LYAKISHEV, N.I., inzh.; VAVILOV, V.I., inzh.

Introduction of an instrument laminated with hard alloys. Der. prom. 11 no.9:20-21 S '62. (MIRA 17:2)

1. Skhodnenskaya mebel'naya fabrika.

PA 153T103

VAVILOV, V. S.

Nov 49

USSR/Radio - Radar
Communications - Interplanetary

"Experiments on Radar Reflections From the Moon," V. S Vavilov, 12 pp

"Uspekhi Fiz. Nauk". Vol XXXIX, No 3

Discusses possibility of flight to the moon, reflection of radio signals from the moon, Dewitt's experiment, method of accumulation, possibility of communication lines using the moon as a passive reflector, and unilateral radio communication with planets.

153T103

USSR/Nuclear Physics-Cosmic Rays Dec 49

"New Theory of the Origin of Primary Cosmic Rays," V. S. Vavilov, 7 pp

155T47 "Uspekhi Fiz Nauk" Vol XXXIX, No 4

Survey of current literature, foreign and Soviet (Fermi, Swann, Richtmeyer, Alfven, Adams), discusses: movement of interstellar matter, accumulation of energy by cosmic-ray particles, spectrum of primary cosmic rays, mechanism behind generation of particles with energies sufficient for subsequent acceleration, "collision" of charged fast particles with magneto-hydrodynamic fields, and calculation

155T47

VAVILOV, V. S.

USSR/Nuclear Physics-Cosmic Rays (Contd) Dec 49

of threshold of energy necessary for subsequent acceleration of particles by wandering, or stray, interstellar magnetic fields.

155T47

VAVILOV, V. S.

USSR/Electronics - Crystals, Germanium Jan 50
Transistors

"New Apparatus: The Amplification of High-Frequency Currents by Crystal Germanium Triodes," V. S. Vavilov 2i pp

"Uspekh Fiz Nauk" Vol XL, No 1

Discusses properties of germanium, construction and operating principle of crystal triodes, and characteristics of transistors. Considers influence of signal frequency, distance between points, and temperature upon operation of germanium triodes; noise

159T7

USSR/Electronics - Crystals, Germanium Jan 50
(Contd)

levels; circuit schemes for hookup of transistor; crystal tetrodes. Gives additional information on triodies. References are mostly non-Russian (84 out of 92).

159T7

USSR/Electronics - Crystals, Germanium Oct 50

"Competitor of Radio Tube (Crystalline Triodes and Their Application)," V. S. Vavilov

"Priroda" Vol XXXIX, No 10, pp 9-13

Survey, mostly from American lit, of cryst rectifiers, amplifiers and transistors made of germanium.

LC 177T33

VAVILOV, V.

Introduction of local conductivity centers (Levels) in semiconductors by nuclear bombardment. Uspekhi Fiz. Nauk 41, 109-12 '50. (MLRA 3:5) (CA 47 no.17:8518 '53)

VAVILOV, V. S.

FA 174T48

USSR/Nuclear Physics - Counters, Crystallic — Jan 51

"Crystallic Counters," V. S. Vavilov

"Priroda" Vol XL, No 1, pp 49-51

Elementary description of action of subject counter in which individual acts of colliding particles are detected in crystal block instead of gas as in Geiger-Mueller counter. Describes scheme for connecting crystal to electronic circuit. Gives displacement lambda for 9 different crystals for certain temp and voltages. Mentions Hofstadter's article "Crystal Counters" in "Proceedings of the IRE" 38, 726, 1950.

LC

174T48

VAVILOV, V.

Vavilov, V. The oscillograph with a running wave. P. 274.

SO: Progress in the Physical Sciences, Vol. XLIV, No. 2, June 1951, (Uspekhi)

USSR/Physics - Electron Optics Oct 52

"Electron Optical Method of Investigation of Electromagnetic Fields and Its Application to Study of the Internal Photoeffect," V. S. Vavilov

"Zhur Tekh Fiz" Vol 22, No 10, pp 1644-1657

Employs electron optical method (similar to Foucault-Tepler method in ordinary light optics) to investigate weak electrical fields of small extension. Employed method permits one to localize and evaluate magnitude of electrical and magnetic fields simultaneously with observations of magnified objects (e.g., surfaces of crystals with held charges). Indebted to Acad A. A. Lebedev, who proposed present theme.

236T94

236T94

VAVILOV, V. S.

(PA 56 no. 669-6057 '53)

VAVILOV, V. S.

USSR/Electronics - Germanium Triodes Jan 52

"Semiconducting Triodes Without Point Contacts," V. S. Vavilov

"Uspekhi Fiz. Nauk" Vol XLVI, No 1, pp 96-106

Reviews foreign literature on improvements in manuf of germanium triodes consisting in low noise level, stability of operation, high amplification power, high efficiency and small dimensions.

209T55

VAVILOV, V. S.

Electronic Apparatus and Appliances

Ion microprojector. Usp. fiz. nauk, 47, No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1953. Unclassified.